CLAIM AMENDMENTS

1-19. (Cancelled)

20. (Withdrawn) Method for determining indirectly in a person's exhalation air the concentration of a specific substance in the blood by measuring the concentration of said substance and the concentration of water vapour in the exhalation air, and utilizing a known relationship between these concentrations the exhalation air being exhaled as undiluted alveolar gas at one end of a defined flow passage and said concentrations being determined by measuring the undiluted alveolar gas in the flow passage, characterized in that the exact evaporation temperature of the alveolar gas is determined, and that the concentration of said substance in the blood is determined according to said relationship with consideration of deviation of the predetermined evaporation temperature from a normal value.

21. (Withdrawn) Method according to claim 20 characterized in that the normal value is the normal body temperature 37°C.

22. (Withdrawn) Method according to claim 20 or 21 characterized in that a referenced gas of a predetermined composition before measuring the undiluted alveolar gas is passed through the flow passage, and that said concentrations are determined by measuring the alveolar gas for calibration of the measurement equipment used for the measurement.

23. (Withdrawn) Method according to claim 22 characterized in that the reference gas is passed through the flow passage after measuring the undiluted alveolar gas, and that the measurement of the reference gas is repeated for control of the calibration.

24. (New) Method for determining in a person's exhalation air the concentration of a specific substance in the blood comprising the steps of measuring the concentration of said substance and the concentration of water vapor in the exhalation air, utilizing a known relationship between these concentrations, flushing the person's face in an air stream of predetermined composition, exhaling the exhalation air freely into a defined air volume having said predetermined composition, and measuring said concentrations in said air volume.

25. (New) Method according to claim 24 wherein the measurement of said concentrations is effected by quantitative detection by means of a light beam, which is sent through the air volume towards a detector.

26. (New) Method according to claim 25 wherein the light beam is a beam of infrared light.

27. (New) Method according to claim 24 wherein the air in the air volume comprises surrounding air from a space wherein the air has predetermined concentrations of water vapor and said specific substance.

28. (New) Method according to claim 27 wherein the air in said space is dry.

29. (New) Method according to claim 24 wherein the air volume comprises an air flow.

30. (New) Method according to claim 29 wherein the air flow is a constant air flow.

31. (New) Method according to claim 29 wherein the air flow is an intermittent air flow.

32. (New) Method according to claim 29 wherein the air flow is passed through a defined flow passage.

33. (New) Method according to claim 32 wherein the exhalation air is directed as an air jet towards and into the defined flow passage.

34. (New) Method according to claim 33 wherein the exhalation air is supplied to the defined flow passage together with the air flow.

35. (New) Method according to claim 32 wherein the defined flow passage is kept heated in order to prevent condensation therein.

36. (New) Method according to claim 24 further comprising the step of measuring the concentration of carbon dioxide in the exhalation air, and wherein the measurement of the concentration of said substance and the concentration of water vapor is initiated first at a predetermined measured value of the concentration of carbon dioxide.

37. (New) Apparatus for determining in a person's exhalation air the concentration of a specific substance in the blood by measuring the concentration of said substance and the concentration of water vapor in the exhalation air and utilizing a known relationship between said concentrations, comprising a tube which defines a space for receiving exhalation air, the tube being open at both ends for exhalation air flow from one end to the other, said space communicating with the surrounding air through the open ends thereof, means for selective quantitative detection of said substance in the air in the defined space, a cuvette which is open at one end thereof, said tube being mounted coaxially in the cuvette for supplying air to said gap which communicates with the tube at said one end thereof, and an inlet allowing free exhalation into said space at said one end of the tube and allowing air supplied to said gap to escape partly through said inlet flushing the face of a person exhaling into said space.

38. (New) Apparatus according to claim 37 further comprising means for supplying an air flow through one of said open ends of the tube.

39. (New) Apparatus according to claim 37 wherein the gap communicates also with said one end of the cuvette.

40. (New) Apparatus according to claim 39 further comprising means connected to said other end of the tube for drawing exhalation air through the tube, these means as well as said means for supplying air to the gap being alternatingly operative.

41. (New) Apparatus according to claim 39 wherein said one end of the cuvette is provided with a rim defining an injection opening and is constructed to deviate the air supplied through the gap, towards said one end of the tube.

42. (New) Apparatus according to claim 37 wherein said means for selective quantity detection comprises a radiation source at said one end of the tube for emission of a light beam axially through the tube, and a detector with filters at said other end of the tube.

43. (New) Apparatus for determining in a person's exhalation air the concentration of a specific substance in the blood by measuring the concentration of said substance and the

concentration of water vapor in the exhalation air and utilizing a known relationship between these concentrations, comprising a device which defines a space for receiving exhalation air under free exhalation in the space, which has two mutually opposite openings through which the space communicates with the surrounding air, means for selective quantitative detection of said substance in the air in the defined space, and means connected to one of said openings for supplying air to the space, the other one of said openings allowing the supplied air to escape to the surroundings flushing the face of a person exhaling in said space.